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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,982	11/29/2001	Koorosh Aflatooni	LWM-A072	4290

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EXAMINER

PETKOVSEK, DANIEL J

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/997,982

Applicant(s)

AFLATOONI ET AL.

Examiner

Daniel J Petkovsek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 29, 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: Brian Healy

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on November 29, 2001, have been considered and made of record (note attached copy of forms PTO-1449).

Drawings

2. New corrected drawings are required in this application because the drawings are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doerr et al. US 20020106143.

Doerr et al. US 20020106143 teaches (ABS, claims) an integrated optical device with an input, a phase filter 205 to change the phase of the optical signal to compensate and filter out

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chromatic dispersion of the signal (paragraph [0017], and an output. Doerr '143 does not explicitly state that a Fourier-type filter is used, but it would have been an obvious implementation to a person having ordinary skill in the art for a filtering device such as the phase compensation filter as disclosed. Regarding claim 13, filter is coupled to planar waveguide grating 220

5. Claims 1-5, 7, and 13-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Saida et al. US 20030031406.

Saida et al. US 20030031406 teaches (Figs 4 and 6, [0013]-[0015] and [0017]) an integrated optic filtering device comprising: an input, an optical filter adding phase compensation to the signal to compensate for chromatic dispersion ([0071]), and an output from the filter. Saida et al. '406 does not explicitly teach that a Fourier-type filter is used, but it would have been an obvious implementation to a person having ordinary skill in the art for a filtering device such as the phase compensation filter as disclosed. Regarding claims 2, 3, 7, 14, and 15, there are disclosed a plurality of waveguide delay lines in Figs. 4&6 for integrally filtering on the substrate, with delay filter properties. Regarding claims 4, 5, 16, and 17, a Mach-Zehnder interferometric implementation is used in the delay lines. Regarding claim 13, see [0005] for arrayed grating implementation, as well known in the art.

6. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doerr U.S.P. No. 6,212,315.

Doerr U.S.P. No. 6,212,315 teaches an integrated optical filtering device comprising: an input, filter (WDM) for phase compensation of the signal to correct chromatic dispersion, and an output. Regarding claim 13, WDM device can be integrated with AWG 303. Doerr '315 does not explicitly teach a Fourier-type filter, but it would have been obvious modification at the time the invention was made to a person having ordinary skill in the art since the filtering disclosed by Doerr '315 achieves the same purpose as the independent claims of Applicant, configured to add a phase compensation to the signal to correct a chromatic dispersion of the signal.

7. Claims 6, 8-12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saida et al. US 20030031406 as applied to claims 1, 7, and 13 above, and further in view of Singh et al. U.S.P. No. 6,185,345.

Saida et al. US 20030031406 teaches (Figs 4 and 6, [0013]-[0015] and [0017]) an integrated optic filtering device comprising: an input, the filter adding phase compensation to the signal to compensate for chromatic dispersion ([0071]). Saida et al. '406 does not explicitly teach that the phase shifting/compensation is based on a thermal impetus.

Singh et al. '345 teaches a similar integrated optical filtering device comprising an input, filtering based on temperature changes in the waveguide to compensate for phase differences in the optical signal, in order to correct chromatic dispersion, and an output. Singh '345 has variable delay lines with Mach-Zehnder interferometer layouts. Since both Saida et al. '406 and Singh et al. '345 are both from the same field of endeavor, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use thermally adjusted phase compensation in the device in order for a means of varying the filtering of the optical

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signal to correct chromatic dispersion problems. Regarding claims 6, 8, and 18, controlling the phase of a delay filter with thermal optic phase shifting is well known in the art in planar waveguide optical devices, and is taught by the combination of Singh et al. '345 and Saida et al. '406. Regarding claims 9-12, Saida et al. '406 disclosed a plurality of delay lines with a Mach-Zehnder type configuration to split and recombine the optical signal using phase compensation.

Inventorship

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of integrated optical device in which dispersion compensation is corrected with the use of filters/WDM/AWG devices:

Katayama et al. 2003/0002772 pertinent to independent claims 1 and 13.

PTO-892 references D-I.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (703) 305-6919.


The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 872-9321.



Daniel Petkovsek
February 14, 2003



Brian Healy
Primary Examiner